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As the quantities of sugar in the moulds were determined by equal dips of a ladle only, there may have been some inaccuracy; but if the result in practice should give a saving of twenty per cent. or even less, the manufacturer will be amply repaid for changing the form of his moulds; especially as the decrease by breakage might be supplied by the new form, and thus eventually occasion very little additional expense.

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No. XVIII.

*An Account of some newly discovered Islands and Shoals, in the Indian Seas. By Mr. Thomas, an Officer on board the American Ship Ganges.*

Read April 1st, 1803.

SHIP GANGES, FEB. 15, 1802.

AT 6 P. M. passed between two islands, lying W b N and EbS, per compass, which we supposed to be Egmont and Edgecomb islands, as seen by captain Carteret in the Swallow.

After running 25 leagues N b E  $\frac{1}{2}$  E, passed by nine small islands entirely covered with wood, lying in a NW and SE direction; in length about 15 leagues. These islands were not seen by captain Carteret, nor are they laid down in the charts which we had, either of Robertson or Dalrymple, nor in any chart I have since seen. Being a breast of the northernmost at noon, had a very good meridian altitude;—which made us in latitude  $9^{\circ} 44' S$ . From distances of moon and stars east and west of her, taken 14 hours after leaving the land, I should lay them down in longitude  $166^{\circ} 43' E$ . They are of a middling height, may be seen at the distance of 8 or 10 leagues, and have no dangerous rocks or shoals in their vicinity: having run so close in with the shore as to see the natives on the beech, and their huts, with the naked eye.

Egmont Island is very erroneously laid down by captain Carteret, in  $11^{\circ} 00' S$ . &  $164^{\circ} 50' E$ . From my observations,

which I had a good opportunity of making, and which may I presume be considered as tolerably correct, I should lay it down in  $10^{\circ} 50' S.$  and  $166^{\circ} 10' E.$

MARCH 3d, 1802.

At 8 A. M. made several small low islands, distant about 6 or 7 miles: they are very dangerously situate, being level with the water, and if it were not for a few cocoa-nut trees growing on them, it would be impossible to see them 3 leagues off, on the clearest day. They lie in a N W and S E direction, about 7 leagues long; and are entirely surrounded with rocks. A reef extends from the N W part into the sea about 6 miles, over which the sea breaks very high: there are but very few dry spots on the whole of them; they consist of white sand and coral. I make the northern extreme to lie in  $9^{\circ} 55' N.$  and the southern in  $9^{\circ} 38' N.$  Longitude of the middle of the shoal, from observations of sun and moon,  $161^{\circ} 26' E.$

SEPTEMBER 7th, 1802.

At midnight made a shoal not twice the ship's length off, and steering right for it; immediately wore, and stood to the N W till day light; then stood to the S E, in order to survey the shoal. At 9 A. M. made the S W part, distant about 3 miles, and run along the N E part of it at the distance of one mile, or a mile and a half: it runs about N E and S W 16 or 18 miles in length, and about  $1\frac{1}{2}$  in breadth; the N E part is the broadest, and on this part was the only dry spot I could see from the mast head. Some large drift-wood lying on it, had much the appearance of black rocks.

It is a very dangerous shoal, and can not be seen until you are very near it. From good observed distances of the sun and moon, which I had the same afternoon, and good meridian altitudes that day and the day after, when in sight of the shoal, I have been able to ascertain its situation with tolerable correctness viz:

The S W. extreme, Lat. 2 52 N. Long. 131 07 E.

The N N. extreme, Lat. 3 06 N. Long. 131 23 E.

These are all in the usual course to and from China, of ships going round New Holland, and returning by the eastern passage.

No. XIX.

*FIRST Report of Benjamin Henry Latrobe, to the American Philosophical Society, held at Philadelphia; in answer to the enquiry of the Society of Rotterdam, "Whether any, and what improvements have been made in the construction of Steam-Engines in America?"*

Philadelphia, 20th May, 1803.

**Gentlemen,**

THE Report due from me to the Society, in consequence of the enquiry made by the Society of Rotterdam, as to the improvements made in America, in the construction of steam-engines, would have been laid before you at a much earlier period, had it not been my wish to submit several American alterations in the construction of steam-engines, which promised to be very valuable improvements, to the test of experience: and this delay has not been without its use; for it has been discovered that some of our innovations, the theory of which appeared to be very perfect, have proved extremely deficient in practical utility.

In this first report I will therefore confine myself to such improvements as have had a fair trial, in engines actually at work.

Steam-engines, on the old construction, were introduced in America above 40 years ago. Two, I believe, were put up in New-England before the revolutionary war; and one, (which I have seen) at the copper-mine on the river Passaic, in New-Jersey, known by the name of the Schuyler-mine. All